

# Zero Waste Live!

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**CHEMICAL RECYCLING IS NOT THE SILVER  
BULLET TO FIX PLASTIC POLLUTION**



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# Why we did the study?

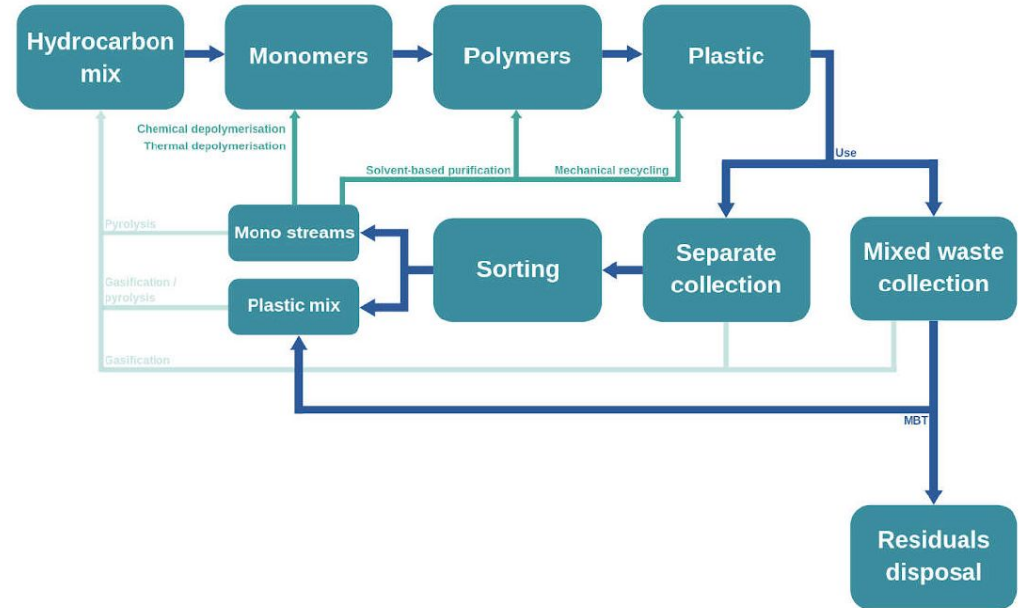
The situation:

- Chemical Recycling was being portrayed as the solution to plastic pollution
- Mounting interest into chemical recycling but nobody really knew what it was that we were talking about

# What's the technology/ies?

Three different technologies:

- Solvent-based purification
- Chemical depolymerisation
- Thermal depolymerisation and cracking (pyrolysis and gasification)



# We found out that...

- The technology is not yet mature
  - No plants working at scale yet
  - 5 to 10 years to get capacity in place
- The costs and energy and mass balance are unknown.
- It mainly works with monostreams or groups of polymers and not with general mixed plastics.
- The industry is split as to what is CR

# Yet... it can have a place in a Circular Economy

- In line with the EU decarbonisation agenda ZWE wants to reduce the amount of plastic produced with virgin oil and this can be done via rationalisation of plastic use, increase of recycled content and bio-sourced plastic.
- ZWE sees a place for CR to deal with plastic waste unfit for mechanical recycling because of being too degraded or too contaminated.

# EU Policy

- Plastic to plastic CR fits in the definition of recycling but should it have the same priority as mechanical recycling?
- Plastic to Fuel CR fits in the definition of recovery.
- Plastic to “materials” -lubricants, solvents...-?
- Eu funding will flow to build CR capacity but will it be for P2P, P2F, P2M?



# Future-proofing CR

- 2030 all packaging in Europe should be recyclable - CR should not be an excuse to keep plastics in the market that are not mechanically recyclable.
- Climate perspective - What sense does it make to turn plastic into -fossil- fuel in times of cheap oil and the cost of energy from renewable sources going down as well as need to decarbonise energy mix?
- Circular Economy - How can plastic produced via CR be competitive in an open market for cheap hydrocarbons?
- Danger that if the only way CR is going to be profitable is by EU providing subsidies we end up in biofuels story 2.0.

# ZWE recommendations

- Need a clear definition of chemical recycling that excludes any operation that does not result in the production of building blocks of high quality material.
- Only processes with a lower carbon footprint than the production of plastic from virgin feedstock can be classified as chemical recycling.
- Chemical recycling should be used to deal only with degraded and contaminated plastics.



# Zero Waste Hierarchy



# ZWE recommendations

- Establish verification systems to ensure chemical recycling process outputs plastic and plastic feedstocks.
- In order to avoid competition with mechanical recycling, but also to differentiate from recovery and disposal operations, a new level in the waste hierarchy should be added for those operations that recover materials from mixed waste that today would end up burned.
- For coherence with EU Climate and Circular Economy agendas EU funding should only be allowed to finance plastic to plastic chemical operations.

# Conclusion

There is a need for clarification in the role that CR is to play in a Circular Economy but it is clearly not THE solution to plastic pollution.

The real solution is: to go upstream, redesign business models and products to be waste-free.

# Closing

Thank you for your attention.

[Download the study](#)